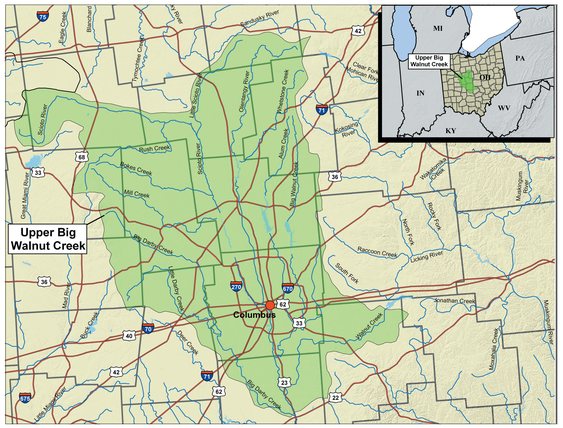
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Upper Big Walnut Creek Watershed, Ohio: 2004-2009

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Evaluate effects of conservation practices on soil quality, water quality and quantity, and wildlife habitat.

Watershed Description

- About 122,000 acres
- 59% cropland, 14% forest, 13% urban
- Extensively tile drained.

Streams have been designated impaired water bodies by Ohio.

- Impaired water quality parameters: drainage, flow and habitat alteration, nutrients, sediment, and livestock manure.
- A Total Maximum Daily Load (TMDL) limit has been set for allowable levels of sediment.

Issues: Runoff from primarily corn-soybean farms carries herbicides, sediment, and excess nutrients to Hoover Reservoir, the drinking water source for about 800,000 Columbus, Ohio area residents. Drainage contributes nutrients linked to hypoxia in Gulf of Mexico.

*Agricultural Research Service

Approach

Water sampling: Pesticides, phosphorus, nitrate-nitrogen, and sediment

Watershed models: SWAT (Soil and Water Assessment Tool)

Research: Effectiveness and economics of drainage management and other conservation practices.

Communicating Results

Five annual progress reports planned; comprehensive water quality data on field runoff and underground tile pipes drainage; ecological assessment of streams; soil quality data; and assessment of practices.

Collaborators

- USDA, Natural Resources Conservation Service
- USDA, Farm Service Agency
- U.S. Environmental Protection Agency, Ohio
- Delaware County Soil and Water Conservation District
- Local landowners and operators
- Upper Big Walnut Creek Water Quality Partnership
- The Ohio Environmental Council
- City of Columbus
- Ohio Department of Natural Resources
- The Ohio State University Extension Service
- The Ohio State University

Contacts

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Partnership meeting with owners and operators.

Dual flumes collecting water quantity and quality data from subsurface water drainage in the watershed.

Inspecting water quantity and quality data from subsurface water drainage in the watershed.

Timeline

2003
Initial funding

2004
August CEAP bibliographies

2005
May Wetlands peer review
July Wildlife literature review (program-based)
October Cropland literature reviews
Wildlife literature review (practice-based)
Wildlife Work Plan
November Wetlands Work Plan
December Draft findings—Prairie Pothole region
1st ARS Benchmark Watersheds progress report

2006
February Preliminary habitat quality models—Prairie Potholes wetland region
March Preliminary National Assessment Report
December 2nd ARS Benchmark Watersheds progress report

2007
Fall National Assessment Final Report
December 3rd ARS Benchmark Watersheds progress report

2008
December 4th ARS Benchmark Watersheds progress report

www.nrcs.usda.gov/technical/nri/ceap/